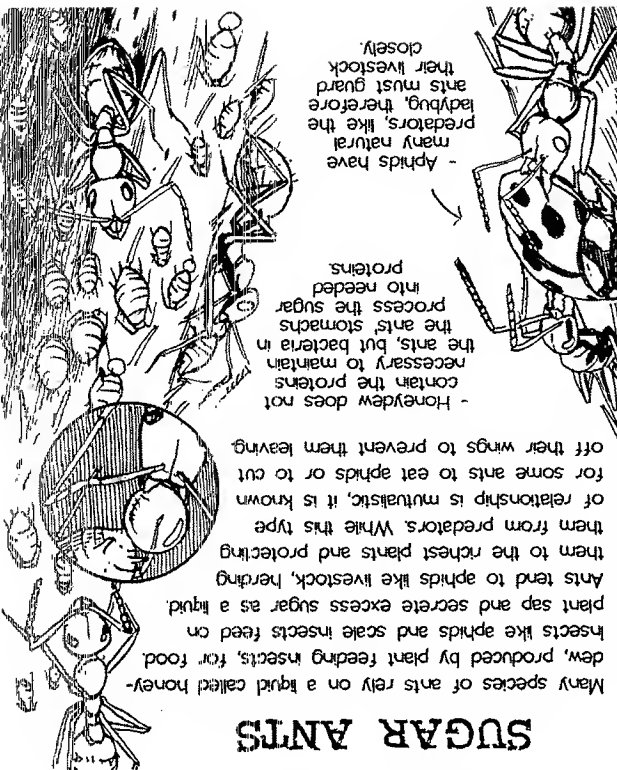


### SUGAR ANTS



Many species of ants rely on a liquid called honeydew, produced by plant feeding insects, for food. Aphids and scale insects feed on plant sap and secrete excess sugar as a liquid. Ants tend to aphids like livestock, herding them from predators. While this type of relationship is mutualistic, it is known as a parasitism because the ants are protecting the aphids from predators. While this type of relationship is mutualistic, it is known as a parasitism because the ants are protecting the aphids from predators.

- Honeydew does not contain the proteins necessary to maintain the ants' stomachs into needed proteins.
- Aphids have many natural predators, like the ladybug, therefore ants must guard their livestock closely.

### SLAVE-MAKER ANTS

One of the more extraordinary behaviors exhibited by ants is the act of capturing slaves. Slave-making ants may either take over other ant colonies by killing their queen, or more commonly, they steal eggs and pupae from other nests to rear as their own. The resulting slave ant will tend to the master's colony as their own. Pretty awesome!

- Certain species of slave making ants like *Formica rufescens* cannot survive without slaves. While they are skilled at capturing slave ants, they do not know how to build nests, find food, or even eat. They rely on slave ants to tend the queen, to raise their young, and to feed them.
- Queens that take over new colonies use pheromones to safely infiltrate other colonies to find and kill their queen. Upon which will then use the dead queen's scents to take control of the colony.
- Often slaves will far outnumber their masters in a colony.

### FUNGUS FARMING ANTS



Many ants, including leaf cutter ants, farm fungus as a food source. The leaves that are harvested by species like *Atta cephalotes* are not eaten but used to grow fungus that make up the majority of the colony's food source. This benefits both ant and fungus, and is called mutualism.

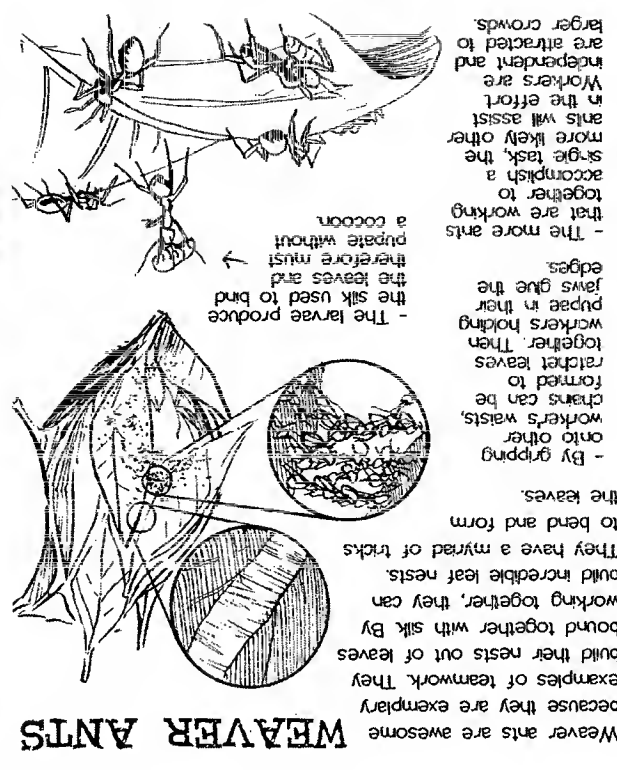
- Fungus farming ants produce antibiotics from glands in their chests to protect their crops from pests and harmful molds.
- Waste disposal is important as to prevent contaminating the crops, so the ants have developed complex waste management systems to speed up the decomposition of waste.
- The fungus grows throughout the nest and is tended by the smallest workers.

### TRAP-SETTING ANTS

Some ant species have deviously clever methods of capturing prey. *Allomerus decemarticulatus* are known for using plant fibers and fungus to construct a false surface pitted with holes over the real stem of the plant. Ants hide in the holes with their jaws open to grip onto legs and antennae of large prey that land on the surface. This allows the tiny ants to take down prey much larger than they are.

- Large insects are stretched and held in place while workers sling them to death or until they are paralyzed. They can then cut it into pieces for easier transportation.
- *Allomerus* harvests fibers from the host plant and builds a frame in which live fungus is then used to fill in the surface.

### WEAVER ANTS

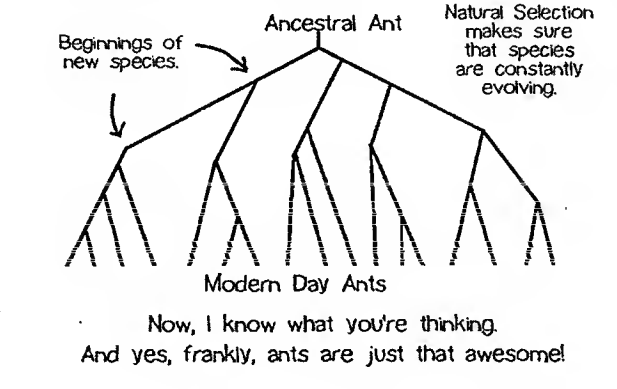


Weaver ants are awesome because they are exemplary examples of teamwork. They build their nests out of leaves bound together with silk. By working together, they can build incredible leaf nests. They have a myriad of tricks to bend and form the leaves.

- By gripping pupae in their jaws give the workers holding rather leaves together. Then formed to be workers' waists, onto other.
- The larvae produce the silk used to bind the leaves and therefore must pupate without a cocoon.
- The more ants are working together to accomplish a single task, the more likely other ants will assist in the effort. Workers are independent and are attracted to larger crowds.

### BUT... HOW?

Yes, ants are completely awesome, but how is it that they have developed such diverse and unique ways to survive? Its by a process called Divergent Evolution. All of these incredible ants evolved from a common ancestor, and divergent evolution allowed slight differences in their population to branch off into their own groups. Eventually those offshoots develop their own behavior and traits, this is how different species are formed.



Now, I know what you're thinking. And yes, frankly, ants are just that awesome!

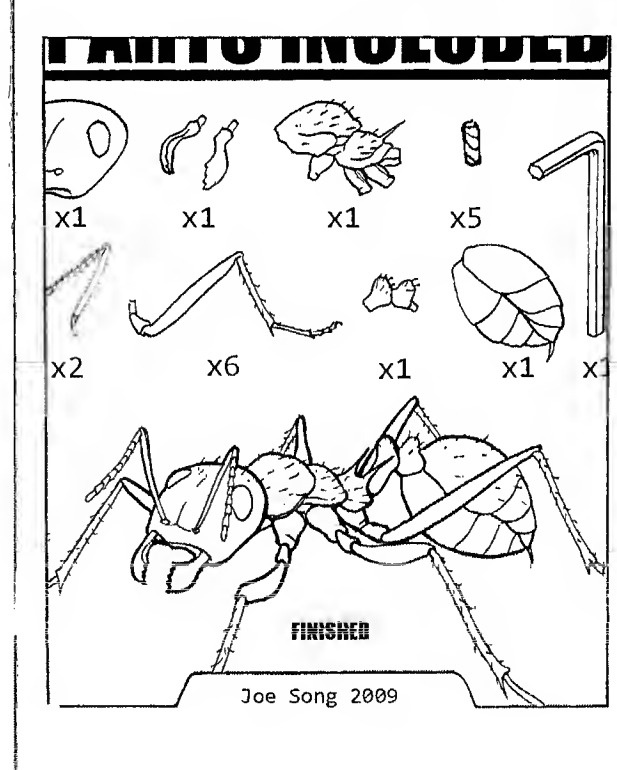
### ARMY ANTS



While most ants are known for building elaborate nests to house their massive colonies, some ants, like the species *Ectophasia burchellii*, are nomadic. Ectophasia colonies swarm across the forest floor attacking and killing anything that is caught in their way. They construct temporary 'camps' by locking their bodies together while scouts march ahead to leave a trail of pheromones for the next journey.

- Captured food, eggs, pupae, and even the queen are carried towards the back of the colony by workers.

### ANT TO INSECT



Joe Song 2009

### ANTS!

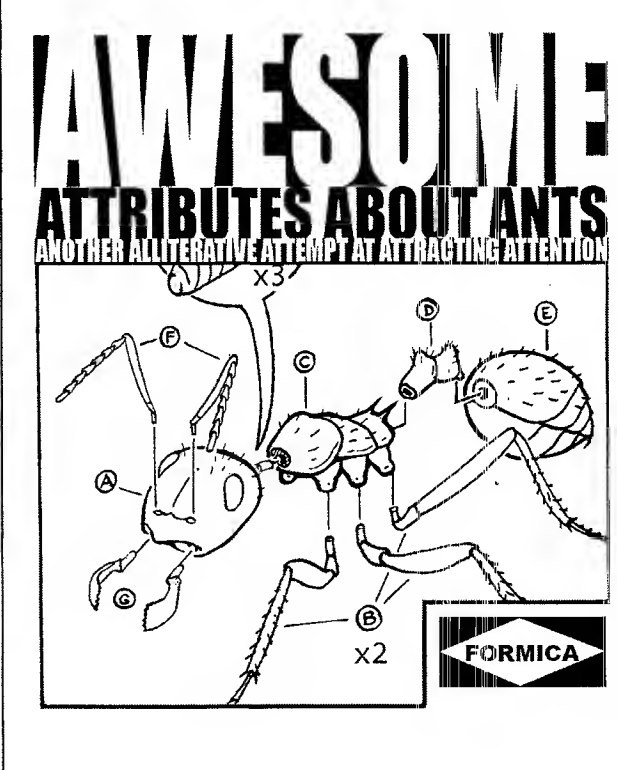


Ants are some of the most common insects around, but are largely overlooked due to their size. Ants are stereotypically thought of as autonomous machines that scurry across the ground in service of the colony. However, ants are quite possibly some of the most complex creatures in not just the insect world, but of all the animal kingdom. Ants belong to the order Hymenoptera, an order shared with wasps, hornets, and bees, and their resemblance can easily be seen due to their characteristically narrow 'waists'. Ants can lock their bodies together to form structures like bridges or nests.

- Soldier ants will line the edges of the colony as a wall to guard the colony.

### AWESOME ATTRIBUTES ABOUT ANTS

ANOTHER ALLITERATIVE ATTEMPT AT ATTRACTING ATTENTION



FORMICA